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SGR's Third Annual Salary Survey

Top Pay Scales Remain Healthy at the Non-Profits

SGR finds that our Annual Selective Survey of Non-Profit Senior Salaries continues to be of consuming interest to a major segment of the readership, easily outdistancing the attention given to our erudite analyses of opaque issues of science policy. So, here it is again, third in the Survey series, derived as usual from the latest submission of IRS Form 990, which all organizations holding tax exemptions under Section 501(c) of the Internal Revenue Code are required to make available for public inspection at their home offices. The salaries listed here may be a year or more out of date because of filing extensions; in general, however, an addition of 5-20 percent brings them approximately up to current levels.

National Academy of Sciences (NAS). The high temple of science pays well at the top echelons and then the scale plummets to the measly levels of government employment. The latest return on file, for 1988 (covering the NAS fiscal year that ended June 30, 1989), reports a salary of \$222,782 for NAS President Frank Press, an increase of \$16,971 from

Philip M. Smith, Executive Officer: \$128,104; \$19,474.
David Williams, Chief Financial Officer: \$108,581;
\$18,911.

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In Brief

NIH is heading for a calamitous collision with budget reality, according to a source at the Office of Management and Budget, who tells SGR that Bethesda's spending momentum cannot be sustained within the tight growth boundaries imposed on discretionary spending in the last Congress. While NIH works to develop a Congressionally mandated cost-control scheme, it has already concluded that it lacks funds for the House goal of 6000 new and continuing awards this year. Despite a \$1 billion budget boost, NIH is now figuring on 5812 awards. In the works are plans for shorter grants and a brake on the growth of dollar amounts (See In Quotes, P. 6).

The General Services Administration has decreed that NSF should relocate from its shabby headquarters in downtown Washington to nearby suburban Virginia, thus seeming to end a long competition between the Virginia and Maryland Congressional delegations. But it's not over yet. SGR hears from the office of Senator Barbara Mikulski, the Maryland Democrat who chairs NSF's Appropriations Subcommittee. Mikulski has vowed to keep hands off the matter, but an aide notes that the NSF management prefers downtown, is resistant to shifting funds for a move, and is skilled at dragging its heels.

What Conflict of Interest? The November 30 *Science* report on the spitting match over NIH priorities between the Institute of Medicine and the Federation of American Societies for Experimental Biology tagged FASEB with a "no-holds barred public assault" on the IOM, and credited the IOM with "an exercise in tough decisionmaking." The author, staff writer Barbara J. Culilton, is a member of the IOM; her husband is the IOM's public-relations chief.

Meanwhile, Floyd Bloom, Chairman of the IOM Committee whose report offended FASEB [SGR December 1], has accused FASEB of a "misleading interpretation" of the IOM's recommendations on NIH training and research priorities. In a statement issued Nov. 29, Bloom said his report called for only a slight shift of funds from research to training, and only in the unlikely event of a zero-growth budget for NIH. He also denied FASEB's charge that the IOM was out of touch with real life bench scientists.

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the previous year. Benefits for Press were reported at \$28,440, a decline of close to \$3000. An entry on the tax return states, "The President is provided a chauffeur-driven automobile primarily for business purposes. Included in compensation is the value of his personal use of the automobile."

No reference is made to the Watergate apartment that the Academy provides for its President. When SGR asked about that last year, an Academy spokeswoman responded that Press pays for "personal use" of the apartment. How much was not stated, and further questions were not welcomed or answered.

Pay and benefits for the two other Presidents in the academy complex were reported as follows:

Robert M. White, President, National Academy of Engineering: \$218,718; \$17,189. That's a pay increase of \$12,907 over the previous year, and virtually no change in benefits.

Samuel O. Thier, President, Institute of Medicine: \$195,322; \$17,189. The pay increase was \$12,276; benefits declined by nearly \$3000.

Proceeding down the hierarchy at the Academy:

... \$268,000 Plus a House for Medical Colleges Head

(Continued from Page 1)

James M. Wright, General Counsel: \$107,287; \$13,959.

The Academy reported on its return that 549 employees were paid over \$30,000 in fiscal 1988, which suggests that a similar number were paid less. Chartered by Congress as an independent adviser to the federal government, the Academy lives largely on government contracts, which totaled \$127 million in fiscal 1988; money from other sources added up to \$31 million.

American Chemical Society. One of the biggest scientific societies (142,000 members), as well as a major publishing house (*Chemical Abstracts* and many specialty journals), the ACS reported revenues of \$201 million in calendar 1989, the latest year on file. The top pay went to John K. Crum, the Executive Director, who received \$176,785, an increase of only \$6285. Benefits totaled \$34,596, an increase of \$4435. Salaries and benefits for ACS Division Directors were listed as follows:

Ronald Wigington: \$163,908; \$29,004.

Robert Marks: \$128,923; \$24,082.

Nick Farmer: \$126,958; \$21,435

James A. Seals Jr.: \$117,097; \$19,746.

D.H. Michael Brown: \$110,931; \$19,201

Also reported by the ACS:

Justin Collat, Secretary: \$107,000; \$19,866.

Brian A. Bernstein, Treasurer: \$93,154; \$15,471.

Association of American Medical Colleges (AAMC). Washington lobbyist for the nation's 127 medical schools, the AAMC also provides several services for medical education, including processing of applications for admission and preparation and administration of the Medical College Aptitude Test. Apparently taking its salary cues from the income standards of medical practice, the AAMC provides its head man, Robert G. Petersdorf, with one of the loftiest salaries on the non-profit circuit, \$268,000 in the fiscal year that ended June 20, 1989, an increase of \$18,000 over the previous year. Benefits remained at around \$25,000.

The AAMC tax return notes that the job comes with a presidential residence, about which it states: "As part of his employment agreement, the president is required [sic] to live in the residence owned by the organization, such residence being designed to facilitate the conduct of association business and entertainment to enable its President to carry out the administrative, ceremonial and social duties of the office."

Other salaries and benefits reported by the AAMC:

John F. Sherman, Executive Vice President: \$178,000; \$17,800.

Richard Knapp, Senior Vice President: \$132,000; \$13,200.

August Swanson, Vice President: \$125,000; \$12,500.

Louis Kettell, Vice President: \$120,000; \$12,000.

James Bentley, Vice President: \$120,000; \$12,000.

Joseph Keyes, Vice President: \$116,000; \$11,600.

American Association for the Advancement of Science (AAAS). The latest return for the AAAS covers calendar 1989, and provides only a partial picture of the salary of the top staff member, Executive Officer Richard S. Nicholson, who arrived in May of that year. His pay was listed at \$102,268, presumably for the seven remaining months of 1989, which suggests a hefty annual rate of pay. Benefits for Nicholson were reported at \$20,769, and \$11,361 was reported for "expense account and other allowances"—a rarity on non-profit tax returns, though it may safely be assumed that other non-profit organizations provide expense accounts for their chiefs.

For the senior staff already on board at the AAAS, pay increases were miserly, a reflection of the fiscal siege mentality that has gripped AAAS in recent years. Through the 1980s, membership was static, at around 130,000, though the population of the scientific community grew rapidly. Under the Nicholson regime, nearly 6000 new members have been added. But the AAAS's prime property, *Science* magazine, is affected by the generally soft ad market. Along with other journals that cater to the biomedical-research market, it also faces competition from *The Journal of NIH Research*, a smartly edited monthly giveaway precisely targeted on people with biomedical money to spend—NIH grantees.

The AAAS 1989 return shows a salary of \$105,167 for the editor of *Science*, Daniel E. Koshland Jr., an increase of \$3117 over the previous year. Koshland, who is also a professor of biochemistry at UC Berkeley, is listed for a "20 hour" work week at *Science*. He was reported as receiving no benefit payments from the AAAS. Also listed on the AAAS tax return:

James Rutherford, Education Office, salary of \$92,859, an increase of \$4421. Benefits in 1989 totaled \$19,740, a decrease of \$1040.

Carl B. Amthor, Chief Financial Officer, salary, \$91,535, an increase of \$4239. Benefits totaled \$20,760, little changed from the previous year.

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... At Hughes, Top Grantors Fared Well in Salaries

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J. Thomas Ratchford, Associate Executive Officer until he moved to the White House science office staff in November 1989, salary, \$100,708, an increase of \$2286. It's not clear from the return, however, whether the income reported for 1989 reflected a full year. Ratchford's benefits in 1989, \$22,000, were about the same as in the previous year.

Aerospace Industries Association (AIA). Through Washington's legendary revolving door in 1986 went Don Fuqua, freshly retired after 14 years as a Florida Congressman and Chairman of what was then called the House Science and Technology Committee. His destination was the presidency of the AIA, lobbyist for the aerospace industry, many of whose heartfelt issues came before Fuqua in his chairmanship days. The latest return for the AIA, covering calendar 1989, reports a salary of \$236,984 for Fuqua, an increase of \$15,607. Benefits rose from \$4433 to \$8712. The IRS return did not list any other executive salaries at the AIA.¹

American Psychological Association (APA). The APA, notable for the turbulence of its internal politics, got a new Chief Executive Officer, Raymond D. Fowler, in June 1989, the calendar year for its latest return. Apparently for just the half year on board, Fowler's salary was reported at \$134,930, with no benefits listed.

A salary of \$150,930 went to Bryant L. Welch, one of four APA Executive Directors, an increase of \$19,503 over the previous year. The benefit payments for Welch went down, from \$17,969 to \$3120. The latter figure is standard for all APA executives in 1989 and represents a sharp drop from the previous year. The following salaries were reported for the other Executive Directors:

Gary R. Vandenberg: \$132,281, an increase of \$37,240.

James M. Jones: \$96,864, an increase of \$7981.

Forrest T. Mullins, \$109,907 (not listed on the 1988 return).

A salary of \$81,705 was reported for the Chief Financial Officer, Charles C. McKay (also not listed on the 1988 return).

Howard Hughes Medical Institute (HHMI). As befits the worldwide behemoth of biomedical-research philanthropy, the pay is especially good at HHMI, which reported a net worth of \$6.1 billion for the HHMI fiscal year ending August 31, 1989 (tax year 1988). Purnell W. Choppin, the President and Chief Executive Officer, received a salary of \$340,000, an increase of \$40,000 over the previous year. On top of that, he received \$78,465 in "contributions to benefit plans," an increase of \$26,859.

Choppin's salary actually was a bit behind that of Graham O. Harrison, HHMI's Vice President and Chief Investment Officer, who received \$350,000. But while Choppin's pay rose, Harrison's remained the same as it was the year before. Harrison's benefits, however, rose from \$60,313 to

Few Seek Look at IRS Forms

Congress struck a blow for *glasnost* when it amended the Internal Revenue Code in 1987 to require tax-exempt organizations to provide easy access to their tax filings, which are made on IRS Form 990. Prior to the amendment, the filings were theoretically available from IRS upon request, but the process took months and sometimes requests went unanswered. The amended system provides a window on a tax-subsidized sector that normally receives little public scrutiny. SGR found, however, that requests for a look are rare, which is unfortunate, since most tax-exempts are run by small, permanent bureaucracies, and only a tiny percentage of members vote in elections. A handy guide to getting the 990s is *Disclosure of Information by Tax-Exempt Organizations*, available for \$3 from Independent Sector, 1828 L St. NW, Suite 1200, Washington, DC 20036; tel. 202/223-8100.

\$88,818. Also on the most recent HHMI tax return were salary and benefits for the following:

George W. Thorn, Chairman of the Board ("Part time, as required"): \$100,000; \$39,893.

George F. Cahill Jr., Vice President for Scientific Training and Development (who has since retired), through June 30, 1989: \$174,167; \$47,183.

W. Maxwell Cowan, Vice President and Chief Scientific Officer: \$240,000; \$39,337.

Joseph G. Perpich, Vice President for Grants and Special Programs: \$175,000; \$37,694.

William T. Quillen, Vice President and General Counsel, and Secretary: \$220,000; \$47,917.

Robert C. White, Vice President and Chief Financial Officer: \$240,000; \$61,308.

Kenneth E. Wright, Executive Director of Research Administration: \$160,000; \$45,113.

Mark W. Smith, Controller: \$115,000; \$27,595.

Under the heading "five highest paid employees" (as distinguished from officers), the HHMI 1988 return listed Lillian M. Blucher, Managing Director, Investments: \$215,825 salary, \$46,493 in benefits. Salary and benefits were reported for the following university-based researchers who hold appointments as HHMI investigators:

M. Philip Leder, Harvard Medical School: \$203,671; \$45,700.

Eric R. Kandel, Columbia University College of Physicians and Surgeons: \$182,600; \$43,347.

Bernard Nadal-Ginard, Harvard Medical School: \$180,000; \$39,807.

C. Thomas Caskey, Baylor College of Medicine, \$177,500; \$43,288.

Payments of \$40,000 each were reported for eight trustees of HHMI.

An Old Friend of Science Takes Committee Helm

Rep. George E. Brown Jr. (D-Calif.), science's most devoted friend on Capitol Hill, has unexpectedly ascended to the Chairmanship of the House Science, Space, and Technology Committee (HSS&T).

Brown won't be able to work wonders from that post, since control of money is what mainly matters in the deficit-bound Congress, and HSS&T merely writes authorizing legislation, often little more than wish lists in today's budgetary setting. The Appropriations Committees dish out the funds.

But the HSS&T Committee has ample staff resources and a broad jurisdiction, including NASA, NSF, the National Institute for Standards and Technology, DOE civilian research, EPA, and the general state of science outside of health and defense. With those jurisdictions split among several committees in the Senate, HSS&T is the only all-science committee on Capitol Hill. It has become the most resonant Congressional sounding board for the science establishment. With the sympathetic Brown on the podium, the opportunities for making a clamor are considerably enhanced.

The HSS&T chairmanship became vacant through a series of switches that began with a successful rebellion against the lackluster Chairman of another committee, Rep. Glenn M. Anderson (D-California), head of Public Works and Transportation since 1988. The Democratic caucus voted Anderson out on December 5. A contest to replace him then took place between No. 2 in seniority on Public Works, Robert Roe (D-NJ), who has been Chairman of HSS&T since 1987, and No. 3, Norman Mineta (D-Calif.). Roe won, 122-107, and thus, when Congress returns in January, moves to the chairmanship of what has all along been regarded as his first legislative love.

With the HSS&T chairmanship open, Brown, the No. 2 Democrat on the Committee, was elected by an overwhelming margin, 166-33, over a token run by another member of HSS&T, Rep. Marilyn Lloyd (D-Tenn.). Brown will be 71 in March and it is assumed that Lloyd, who moves up to the No. 3 spot in seniority on HSS&T, is looking ahead.

Brown has been a member of the House since 1963, with the exception of a term out of office for an unsuccessful run for the Senate in 1970. His biographical entry in the *Congressional Directory* notes that he holds a "B.A. in industrial physics" from UCLA. In a press release, he refers to himself as "a physicist."

A member of the HSS&T Committee since 1965, he was either the initiator or a strong supporter of some of its most important legislation, including the bills that reestablished the White House Science Office in 1976, following its abolition by Nixon, and the creation in 1972 of the Congressional Office of Technology Assessment. He has been a member of the OTA Board from the start.

In the last Congress, Brown was, as usual, directly involved with a flock of science-related measures that made

it through the legislative mill, including the Science, Engineering, and Mathematics Educator Award Act, which authorizes various federal programs in those fields, the Science Museum Assistance Act, and the Nutrition Monitoring Act of 1990.

The scientific establishment has responded to Brown's dedicated service with a shower of honors, including three in recent months. In May, he received NSF's Distinguished Public Service Award; in October, he was elected an Honorary Member of Sigma Xi, the scientific research society, and was also awarded the Philip Hague Abelson Prize, bestowed annually by the American Association for the Advancement of Science "in recognition of sustained exceptional contributions to advancing science."

Roe, the departing Chairman of HSS&T, fell into that post via the peculiarities of the seniority system. Long a member of both Public Works and HSS&T, Roe concentrated his energies on the former, while merely keeping his name on the membership rolls of the latter and thereby collecting seniority points. In 1987, the retirement of Rep. Don Fuqua (D-Fla.) opened the HSS&T chairmanship, and Roe stepped into it, a stranger to the staff, and virtually a newcomer to its hearings. Roe made the move, it was said, on the principle that, given the perquisites involved—staff, deference, opportunities for glory—any chairmanship is better than no chairmanship.

As Chairman of HSS&T, Roe was gung-ho for anything that came before the Committee, particularly the big items, such as the space station, the Superconducting Super Collider, and fusion research. He was also an NSF booster. But he showed no interest in the proposition that money was lacking to do them all and therefore priorities should be set.

In a long era of domestic austerity, Public Works has had relatively little opportunity to fulfill its traditional role as the pork-barrel bastion on Capitol Hill. But with the crumbling of roads, dams, and bridges, "infrastructure" is becoming a trendy theme in Washington. Roe, a savvy operator on Capitol Hill, did not hesitate to switch chairmanships when the opportunity arose.—DSG

Social Science Campaign Gains at NSF

The long campaign to establish a separate directorate for the social and behavioral sciences at the National Science Foundation went forward another step last month when a task force created to review the issue voted its approval. The vote followed a marathon hearing at NSF in which testimony was received from some 95 witnesses, representing virtually every party interested in the subject. The next step calls for the task force to draft a specific proposal for lifting the social and behavioral sciences out of their present location, in the Directorate for Biological, Behavioral, and Social Sciences [SGR October 1]. Still to be heard from is NSF's incoming Director, Walter Massey, whose arrival date is uncertain, but not expected before March.

Bovine Hormone: Clever Stuff, But Who Needs It?

The genetically engineered hormone that induces cows to produce more milk was pronounced safe for human consumption last week by an appropriately credentialed panel of the National Institutes of Health. But the real problem isn't the safety of this stuff. Rather, it's the folly of industry plowing \$500 million worth of research into expanding production of a commodity that tends to mammoth surpluses in the normal course of agriculture.

Unfortunately, however, when free enterprise chooses to squander valuable scientific resources, the issue of prudence is beyond outside scrutiny.

The wonder product is bovine somatotropin—BST, for short—a genetically engineered mimic of a growth hormone that's naturally present in cattle. Give a cow a dose of the man-made version and her milk output will soar as much as 25 percent. The reported results are dramatic, but dairy farmers are both wary and excited about BST.

Some farmers, particularly the smaller ones, fear the economic turbulence that might ensue from a sudden surge of milk output. Others feel that while BST is in a class by itself, it is nonetheless in the tradition of increased farm productivity through scientific research. The economics of BST, however, are far from clear, since increased milk production comes at the cost of buying and administering the hormone, higher feed consumption and, possibly, shorter life expectancy for the herds. Cheaper milk is not guaranteed by BST.

The moment of regulatory decision is approaching for the four firms that have invested the \$500 million in research to develop BST and conduct trials with dairy herds to assure its effectiveness and safety—Upjohn Company, Monsanto, the American Cyanamid Company, and Eli Lilly & Company. They insist that BST leaves nothing but minuscule residues that are virtually indistinguishable from the naturally occurring hormone present in the milk.

The Food and Drug Administration recently delayed the issuance of an official decision, pending further review of the scientific literature. There's little doubt, however, that with NIH adding to the weight of scientific judgment on the safety of BST, the regulatory track is clear for approval by the FDA sometime next year.

But left untouched in this controversy is the issue of wise use of scarce scientific resources. It's not a legal issue, and it's not within the purview of government agencies when industry is spending its own money. Nonetheless, it's an important one, though the only muscle that can be brought to bear on it is public opinion. That's in the picture, too, since five supermarket chains, threatened with boycotts by organizations alarmed by genetic tinkering, have agreed not to sell BST-produced milk. But far-fetched concerns about safety, rather than the cloudier issue of scientific priorities, motivated the boycott threats.

The dairy industry in the industrialized nations has many problems, but productivity increases is not among them.

From 1955 to 1975, the average annual output of American dairy herds rose from 5,842 pounds per cow to 10,360; by 1985, it was up to nearly 13,000 pounds. The increases were achieved through breeding improvements, more efficient use of feed, and other boons to efficiency. Today, some herds have achieved output of over 20,000 pounds per cow—without BST. How much more milk can be squeezed out of the cow is uncertain, but the ultimate, whatever it is, was being effectively pursued before the arrival of genetic engineering.

The irony of the vast BST investment by the four firms is that in the politics of agriculture, milk has long been synonymous with surplus. In 1983, US government price support programs had run up a stockpile of 1.3 billion pounds of non-fat dry milk. "Butter mountains" were built in cool storage caves in the US and in Europe, where farmers had also achieved mighty productivity increases.

Five years ago, Washington tried to control the surpluses by buying dairy cows for slaughter, but farmers easily countered that tactic by producing more milk with fewer cows. The drought of 1989, along with a continuing growth of exports, temporarily brought about an unprecedented shortage of milk and a surge in prices. But in the normal course of events, America's dairy farmers are able to inundate the economy with more milk than it can possibly use.

The \$500 million squandered on this pointless quest for further productivity could have bought a lot of useful research in health and agriculture, neither of which is brimming over with money these days. The companies will counter that they're spending, and risking, their own money, and that the choices are theirs to make. That's legally correct, but evasive. Most of their scientists were trained at government expense. And the science that's embodied in BST was paid for by the taxpayers. In today's economy, there's no such thing as private science.

BST is a great achievement of science—and a foolish one.—DSG

NIH Names 3 to Gallo Panel

A panel of three "Expert Scientific Advisers" has been appointed by the NIH Office of Scientific Integrity to assist in the investigation of Robert C. Gallo's role in the identification of the AIDS virus. They are: Kenneth I. Berns, Chairman of the Department of Microbiology, Cornell University Medical College; Michael McGrath, Assistant Professor, San Francisco General Hospital AIDS Research Laboratory, and Priscilla A. Schaffer, Professor of Microbiology and Molecular Genetics, Harvard Medical School.

Following an inquiry that resulted in the dismissal of several allegations, NIH announced in October that it would test "biological samples in an effort to determine the origins of HTLV-IIIB, the virus that Dr. Gallo and his colleagues used to develop the blood test" for HIV [SGR Oct. 15].

In Quotes: Science is Shortchanging Its Own Future

From an address by Robert M. Rosenzweig, President of the Association of American Universities, to the Annual Scientific Meeting of the Gerontological Society of America, November 16, in Boston.

The early architects of biomedical research policy in the Congress and at NIH somehow understood that consumption, unsupported by investment, is a dead-end street, because without investment, the capacity to produce withers and eventually dies. Thus, the early efforts to build biomedical research included, in addition to funds for research, money for research facilities, for research instrumentation, and for research training.

The balance began to slip away from investment in the 1970s and has slid steadily in the direction of consumption ever since. There are now virtually no programs in NIH that help in the construction and renovation of laboratory facilities. Training programs have been reduced, and money that was once available for small, seed investments in new areas of research has for all practical purposes dried up.

This is actually a broadly applicable description of American science policy in the 1970s and 1980s. It is especially vivid in the area of biomedical research, however, because even as funds for investment declined, support for research continued to grow—in the decade of the 80s, for example, at an annual rate of about 11 percent. Eventually, those two facts had to come into conflict, and they have.

The conflict, which was inevitable in any case, was triggered by the success of the biomedical research lobby in persuading Congress in 1985 to mandate a large increase in the number of new grants each year. . . At the same time, the research community, on its own and without consultation with the key Congressional committees, persuaded NIH to increase the length of each grant award. While both of those policies were being implemented, the average cost of grants continued to rise.

Within four years of the adoption of those policies, even the 11-percent annual increases in the NIH budget were insufficient to carry both the forward obligations of a large number of longer and more expensive grants and the required number of new grants to which the research community had become accustomed. Since the obligations had to be met, there was a sudden reduction in the number of new grants that could be made. The award rate went down, the failure rate went up, and what can fairly be described as hysteria swept the research community. "Medical Research Is in Ruins" was the headline of a recent op-ed piece in the *New York Times* [September 2, by Leon E. Rosenberg, Dean of the Yale School of Medicine]. . .

[T]he perception of limited resources tends to concentrate attention on the needs of the present, leaving the future to take care of itself. The focus of organized biomedical science is on maximizing current "research dollars," a term

that is defined as money that goes to the scientist at the bench and is under the scientist's control. Anything that is seen to reduce those dollars by diverting them to some other purpose is, for that reason, to be opposed.

Thus, a recent report from the Institute of Medicine [SGR December 1] that recommended that the nation's biomedical research effort needed to balance present and future considerations by providing funds for training and for infrastructure, as well as for direct research grant support, has been denounced because it would, if adopted, reduce the money available for individual investigators' projects.

It is easy to understand the intensity of such feelings. The needs to which they speak are real and important. Those who argue for those needs are not doing so solely, or even primarily, out of self-interest. . . But all of that said, it must then be said that they speak also and overwhelmingly for the present. Their concern is for what is possible now, not for what will be possible if the strength of their enterprise is sustained into the future and may not be possible if it is not.

In the most rational and well-ordered system imaginable, that is the dilemma of policy-making in conditions of scarcity. . . But we do not operate in the most rational and well-ordered system imaginable. We operate in a system in which interests clash, intensity matters, votes are counted, and only the present is represented. That is why the problems of biomedical research are so emotional, divisive, and difficult to resolve. . .

Job Changes & Appointments

David Bodde, Executive Director of the Commission on Engineering and Technical Systems at the National Academy of Sciences, has resigned to become Vice President of the Midwest Research Institute. Bodde joined the Academy staff in 1986, following service with the Congressional Budget Office and the Department of Energy.

Also at the Academy, *Charles M. Benbrook*, Executive Director of the Board on Agriculture since its founding in 1982, has been fired, according to the November 30 *Science*, which reports he had offended the chemical industry and the Department of Agriculture.

Ted Sherburne, President of Science Service since 1964, plans to retire in September. The organization publishes the weekly *Science News*, of which Sherburne is publisher, and administers the Westinghouse Science Talent Search. Guy Stever, a member of the Science Service board, is head of a search committee for a successor.

At the National Institutes of Health: *David Rodbard* has been appointed head of the NIH Division of Computer Research and Technology. He formerly was a laboratory chief at the National Institute of Child Health and Human Development. *Steven J. Hausman* has been appointed Deputy Director of the National Institute of Arthritis and Musculoskeletal and Skin Diseases. He formerly was Director of the Institute's extramural programs.

More In Print: Biomedical Funds, MD Supply, Etc.

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committee of one of the most ambitious state attempts to employ science and technology as an economic booster. The Ohio program now comprises eight centers—three on manufacturing, three on materials, and two on biotechnology; a ninth, the Applied Information Technology Research Center, has been terminated, with its failure attributed by the reviewers to poor academic and business links.

The NAS study, by a specially appointed group chaired by Harold W. Paxton, US Steel Professor, Carnegie Mellon University, concluded that "On the whole, the centers have given good value for the state's investment." But it noted that with the centers only two to five years in operation, it's too early to tell whether their research is "creating, attracting, or expanding industry." Small firms have benefited from technical assistance provided by the centers, the report states, but the record on start-up companies "was modest at best." Review of state programs by the federally focused Academy is not unique, but it's rare. NAS conducted the review under a contract for \$192,000, of which \$30,000 has been set aside for a return look.

Order from: National Academy of Sciences, Room HA-466, 2101 Constitution Ave. NW, Washington, DC 20418; attn. Janice Greene; tel. 202/334-2576.

Forum on Supporting Biomedical Research: Near-Term Problems and Options for Action (23 pp., no charge), a "summary"—exceedingly skimpy—of the lively and illuminating meeting on the fiscal woes of NIH, held June 27 by the National Academy of Sciences and the Institute of Medicine [SGR August 1: "NIH Crowd Seeks New Ways Out of Money Crunch"]. The preface lamely states that "the document is constructed to provide a sense of the meeting rather than to record the exact order and substance of presentations." It falls far short of even that modest goal, omitting, for example, references to speakers who questioned whether NIH is making good use of the available resources (among them, David Baltimore, President of Rockefeller University, and Joel Schindler, an NIH researcher and administrator). The failure to produce an accurate record of this important meeting is puzzling—all the more so in view of the heavy volume of instantly discardable publications that routinely roll off the Academy's presses.

Order from: National Academy of Sciences, Commission on Life Sciences, Room 343, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 202/334-2500.

Supplying Physicians for Future Needs: The Report of the Task Force on Physician Supply (140 pp., no charge), from the Association of American Medical Colleges (AAMC), Washington lobbyist for the medical-school industry, a report, in the works since 1987, on the foggy issue of how

many and what kinds of doctors will be needed in coming years. Produced under a steering committee chaired by Donald C. Tosteson, Dean of Harvard Medical School, the report is rich in statistics, but cautious in stating their meaning. AAMC President Robert G. Petersdorf sets the tone in a preface noting that "some individuals will feel that this report does not go far enough in recommending alterations that will affect the production of physician manpower; others will feel that it goes too far. Being a consensus organization, any report emanating from the AAMC is likely to hit the middle ground..."

The report cautions that a "surfeit" of physicians can run up costs and "lead to the atrophying of clinical skill," but it adds that increased access to health care would tend to remedy that. The report ignores the politically sensitive issue of closing down the several schools that are teetering on the edge of fiscal and intellectual bankruptcy—which has already happened in dental and nursing education. A section on "Implications of Physician Supply Issues on Programs for the Education of Biomedical Scientists" says the implications are not clear. What's striking about the report is that, four years in the works by some of the leading figures in medical education and health care, it has drawn virtually no attention from the popular press. That could be a reflection of its mushy nature, or it could be that the "doctor glut" issue has lost public appeal.

Order from: Association of American Medical Colleges, No. 1 Dupont Circle NW, Suite 200, Washington, DC 20036; attn. Rubye Trawick; tel. 202/828-0554.

SGR Holiday Schedule

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In Print: Euro-Science, Engineering, Health Outcomes

The publications listed are obtainable as indicated—not from SGR.

Science and Technology Integration in Europe and Influences on US-European Cooperation (NSB-90-172; 40 pp., no charge), from the National Science Board, NSF's policymaking body, a look at the R&D implications of Europe 1992. Reflecting the customary Brussels snow job, the report asserts that "evidence is abundant of an evolution toward some sort of strategic framework for the multilateral, interdependent utilization of resources."

It notes, however, that for the "foreseeable future," the US will be heavily involved in "bilateral cooperation with the individual member states." Elsewhere, the report acknowledges that only "a minuscule" share (4-5 percent) of total national R&D spending is managed from Brussels, and that the home-based research agencies of the member nations are resistant to surrendering budgets and discretion to a central authority.

Recommendations include closer ties between the US and EC research programs, including "some form of agreement" on US-EC bilateral programs to be negotiated through the US-EC Joint Consultative Group on S&T, a recently created body, handled on the US side by the White House Office of Science and Technology Policy.

The first title above was produced by a committee; the second, providing more details and analysis, was written by Richard E. Bradshaw, NSF Senior Analyst, Western European Science and Technology. The two reports, to be published in January, are now available in prepublication typescript.

Order from: NSF, Forms and Publications, 1800 G St. NW, Washington, DC 20550; tel. 202/357-7668.

The Freshman Year in Science and Engineering: Old Problems, New Perspectives for Research Universities (51 pp., no charge), report of an NSF-sponsored conference held in April by the Alliance for Undergraduate Education, a cooperative project founded in 1986 by 16 major institutions, contains the usual denunciations of stale, ineffective freshman science and engineering instructions in schools that pride themselves on research output and advises them to upgrade their performance. Included are descriptions of innovative teaching programs, along with a dismal reminder of how little improvement has been made in this area: summaries of 13 major reports, issued between 1983 and 1989, on the inadequacies of science and mathematics education, along with remedial recommendations, few of which have been adopted on a significant scale.

Order from: Alliance for Undergraduate Education, 405 Old Main, University Park, Pa. 16802; attn. Anne K. Nelsen, Executive Director; tel. 814/865-2960.

Effectiveness and Outcomes in Health Care (229 pp., \$25, plus \$2 for shipping), proceedings of a conference held in September 1989 by the Institute of Medicine as a conclusion to the IOM's series of studies for Medicare on the topic of "what works in the practice of medicine," with specific reference to hip fracture, breast cancer, and acute myocardial infarction. Motives other than intellectual curiosity may be assumed in the hardpressed Medicare's quest for guidance on this subject. The volume, however, provides the federal patron with grounds for wondering about the utility of this long-running exercise.

In a concluding section titled "Where Do We Go From Here," Henry J. Aaron, a Brookings Institution economist, cautions that hopes for Medicare savings from the IOM studies are likely to be disappointed. "Effectiveness research will go on for decades," he stated, adding that "The results will accrue slowly. Even if on balance, the results achieve the cost reductions that the most bullish supporters claim they will do, these results are going to come in over a period so long that I would suggest they are going to be almost undetectable against the background of other forces affecting medical care expenditures."

Fresh off the press from the IOM studies: *Acute Myocardial Infarction: Setting Priorities for Effectiveness Research* (61 pp.); published earlier: *Hip Fracture* (64 pp.) and *Breast Cancer* (72 pp.). They're \$15 each.

Order from: National Academy Press, 2101 Constitution Ave. NW, Washington, DC 20418; tel. 1-800-624-6242; in Washington, DC: 334-3313.

Small Business Innovation Research: Program Solicitation (98 pp., no charge), from the Department of Energy, listing the research topics for which it is inviting applications for the next round of awards in the SBIR program, now in its ninth year. Applicable to virtually all federal research agencies, SBIR requires a set aside of 1.25 percent of external research funds for grants to small business firms. Last year, DOE spent \$39 million on the program. Phase I awards, up to \$50,000, are provided for preparing a detailed proposal; Phase II awards, up to \$500,000, are for conducting research. DOE is planning 150 Phase I awards in fiscal 1991, which ends next September 30. Deadline for applications: March 7. Also available: *Abstract of Phase I Awards 1990* (128 pp., no charge) summarizing 170 SBIR projects funded by DOE last year from a total of 1172 applications.

Order from: SBIR Program Manager, US Department of Energy, Washington, DC 20585; tel. 301/353-5707.

Ohio's Thomas Edison Centers: A 1990 Review (35 pp., no charge), a review by a National Academy of Sciences
(Continued on Page 7)

